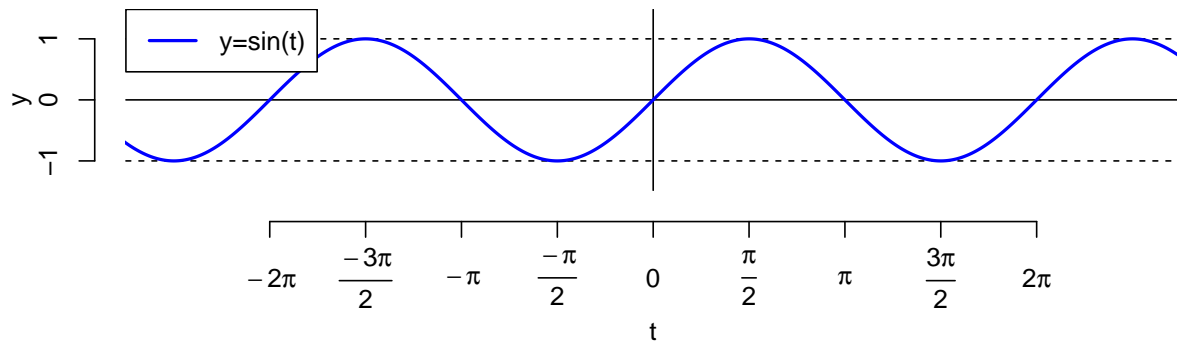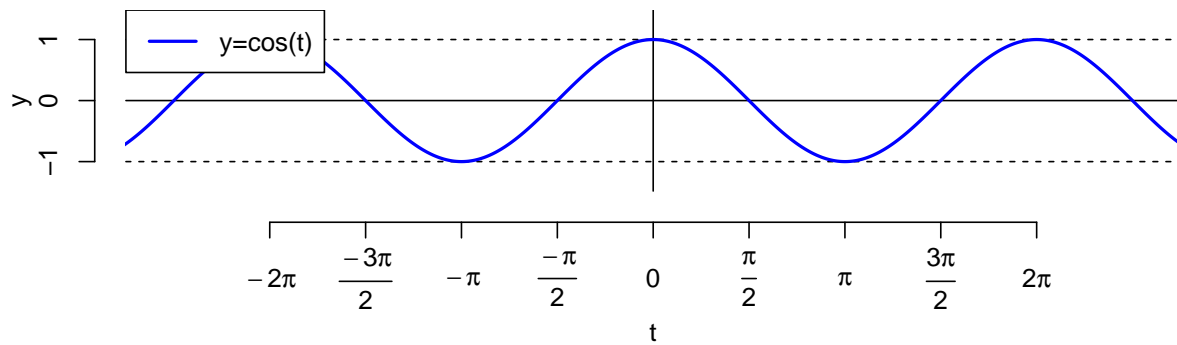# Wave Cheat Sheet

Parent Functions

The sine function $y = \sin(t)$

- Hits midline with positive slope at $t = 0$

The cosine function $y = \cos(t)$

- Has a maximum at $t = 0$

Temporal Sinusoidal Oscillation

$$y = A\sin(Bt) + D \quad \text{or} \quad y = A\cos(Bt) + D$$

- Amplitude $= |A|$
- Angular frequency $= B$, and $B > 0$
- Period $= P = \frac{2\pi}{B}$
- Frequency $= f = \frac{B}{2\pi}$
- Offset $= D$, so midline is at $y = D$.